MEMORANDUM

Shaw Environmental and Infrastructure, Inc. Contract No. EP-C-08-034

In reply refer to: 11-LH-22A

To: Cindy Paul From: Lisa Hudson

Dennis Miller

Lab: GC

Thru: Sujith Kumar Date: 6/28/11

John Cox

Technical Directive: 70A767SF Originator: Rick Wilkin

Task No.: 23993 Copies: Rick Wilkin

Steve Vandegrift Lisa Hudson John Cox

Project/Sample Site: Pavillion Groundwater

Date Collected: 4/18-21/11Shaw Sample Set No.: 6030, 6032Date Received: 4/21-22/11Sample Matrix: Water

Date Analyzed: 6/27-28/2011 Analysis Type: Dissolved Gas No. Samples Analyzed: 3 Sample Preparation: Not applicable

Method(s) Used: RSKSOP-194 rev4 Gas Analysis by Micro Gas Chromatograph

RSKSOP-175 rev5 Sample Preparation and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique

Comments: All QC results met criteria established in RSKSOP-194, and RSKSOP-175.

No lab duplicates were analyzed due to lack of sample. These samples were re-analyzed with argon blanks before each sample to demonstrate that the analytical system contained no detectable analytes. The argon blank prior to the sample was blank for all three re-analyses.

NOTE: Sample 6030-15 was broken in transit and a spare 40 ml vial substituted. Detection limits utilizing 40 mls instead of 60 mls will be higher.

	Α	В	С	D	E	F	G	Н	1 1	.1	К
1	,,				_	,	Ť		,	Method	HLC
2	Gas	CAS#	mol. wt.	Α	В	С	D	T, °C	Quant limit (ppm) *		
3	Methane	74-82-8	16	-365.183	18106.7	49.7554	-0.00028503	25	10.0	1.47	39,769
4	Ethane	74-84-0	30	-533.392	26565.0	74.6240	-0.00457313	25	10.0	2.65	29,771
5	Propane	74-98-6	44	-628.866	31638.4	88.0808	0.00000000	25	10.0	2.05	36,809
6	n-Butane	106-97-8	58	-639.209	32785.7	89.1483	0.00000000	25	10.0	1.99	45,275
7											
8											
9											
10											
11											
12			ppm	ppm (syr dil corr)		ppm	ppm (syr dii corr)		ppm	ppm (syr dil corr)	
13	Sample	sample ID	Methane	Methane	PPG	Ethane	Ethane	PPG	Propane	Propane	PPG
14	Trip Blank	S	129.659	195.840	1.918E-04	194.268	293.426	2.874E-04	0.000	0.000	0.00E+00
15	Blank	S	134.902	207.013	2.324E-04	200.652	307.910	3.456E-04	0.000	0.000	0.00E+00
16	Field Blank	S	0.000	0.000	0.000E+00	0.000	0.000	0.000E+00	0.000	0.000	0.00E+00
17											
18											
19											
20	·										
21											
21 22											
-											
22											

	L	M	N	R	S	T	U	V	W	Х
1										
2										
3										
4										
5										
6										
7										
8										П
9										
10									headspace	
11							headspace	instrument	dilution	П
12	ppm	ppm (syr dil corr)			sample		gas volume	injection	injection	
13	n-Butane	n-Butane	PPG	TC	pressure, psi	Bottle vol, mL	mL	volume mL	volume mL	
13 14	n-Butane 0.000	n-Butane 0.000	PPG 0.00E+00	T C 23.0	pressure, psi -0.3	Bottle vol, mL 60.0	mL 6.0	volume mL 3.0	volume mL 3.0	Н
$\boldsymbol{\vdash}$										
14	0.000	0.000	0.00E+00	23.0	-0.3	60.0	6.0	3.0	3.0	
14 15	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	
14 15 16	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	
14 15 16 17	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	
14 15 16 17 18	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	
14 15 16 17 18	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	
14 15 16 17 18 19 20	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	
14 15 16 17 18 19 20 21	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	
14 15 16 17 18 19 20 21	0.000 0.000	0.000 0.000	0.00E+00 0.00E+00	23.0 23.0	-0.3 1.8	60.0 40.0	6.0 5.0	3.0 3.0	3.0 3.0	

Y	Z	AA	AB	AC	AD	ΑE	AF	AG	AH	Αl	AJ	AK	AL	AM	AN	AO	AP	AQ
1																		
2	Shaw Environmental	and Infrastructure	, Inc.															
3	Analytical Service Res	ults Report																
4																		
5																		
6	Laboratory:	G C		Report Date:	6/28/11													
7																		
8	Technical Directive:	70A767SF																
9																		
10	Analyst:	Lisa Hudson		Analytes				Methane			Ethane			Propane			n-Butane	
11				CAS#				74-82-8			74-84-0			74-98-6			106-97-8	
12	Method:	RSKSOP-175, R	SKSOP-194	Unit				ppm, v/v in gas			ppm, v/v in gas			ppm, v/v in gas			ppm, v/v in gas	
	Late Committee ID	Date Callested	Date Avaluated	Field Sample ID	SyrDilCorr	MDL	ä	Data	MDL *	QL *	Data	MDL *	ď.	Data	MDL *	\ \ \	Data	
13	Lab Sample ID	Date Collected	Date Analyzed	r leid Sample ib	Sylvincon	MUL	ÿ	Butu	WIDL	Ψ.			ļ	5 0.00	MIDL	×υ	Data	
13	6030-9	4/14/2011	6/27/2011	Trip Blank	1.510	2.22	15.10	196	4.00	15.1	293	3.096	15.1	ND	3.01	15.1	ND	
	<u> </u>			,						<u> </u>			_			_		
14	6030-9	4/14/2011	6/27/2011	Trip Blank	1.510	2.22	15.10	196	4.00	15.1	293	3.096	15.1	ND	3.01	15.1	ND	
14 15	6030-9 6030-15	4/14/2011 4/18/2011	6/27/2011 6/28/2011	Trip Blank Blank	1.510 1.535	2.22 2.26	15.10 15.35	196 207	4.00	15.1 15.3	293 308	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	
14 15 16	6030-9 6030-15 6032-5	4/14/2011 4/18/2011 4/21/2000	6/27/2011 6/28/2011 6/27/2011	Trip Blank Blank	1.510 1.535 1.507	2.22 2.26 2.22	15.10 15.35 15.07	196 207 ND	4.00 4.07 3.99	15.1 15.3 15.1	293 308 ND	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	
14 15 16 17	6030-9 6030-15 6032-5 1. If the parameter was quantitation limit, BQL (4/14/2011 4/18/2011 4/21/2000 detected above th) denotes that the	6/27/2011 6/28/2011 6/27/2011 ne quantitation limi parameter was de	Trip Blank Blank Field Blank it (QL), the numeric result is retected above the method de	1.510 1.535 1.507 reported; BC	2.22 2.26 2.22 0L denote (MDL) bu	15.10 15.35 15.07 s that the	196 207 ND e parameter was r QL and the estimat	4.00 4.07 3.99	15.1 15.3 15.1 ted at or	293 308 ND	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	
14 15 16 17	6030-9 6030-15 6032-5 1. If the parameter was quantitation limit, BQL (4/14/2011 4/18/2011 4/21/2000 detected above th) denotes that the	6/27/2011 6/28/2011 6/27/2011 ne quantitation limi parameter was de	Trip Blank Blank Field Blank it (QL), the numeric result is r	1.510 1.535 1.507 reported; BC	2.22 2.26 2.22 0L denote (MDL) bu	15.10 15.35 15.07 s that the	196 207 ND e parameter was r QL and the estimat	4.00 4.07 3.99	15.1 15.3 15.1 ted at or	293 308 ND	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	
14 15 16 17 18 19	6030-9 6030-15 6032-5 1. If the parameter was quantitation limit, BQL (parenthesis; ND denote	4/14/2011 4/18/2011 4/21/2000 detected above th) denotes that the s that the parameter	6/27/2011 6/28/2011 6/27/2011 ne quantitation limi parameter was de er was not detecte	Trip Blank Blank Field Blank it (QL), the numeric result is retected above the method de	1.510 1.535 1.507 reported; BC	2.22 2.26 2.22 0L denote (MDL) bu	15.10 15.35 15.07 s that the	196 207 ND e parameter was r QL and the estimat	4.00 4.07 3.99	15.1 15.3 15.1 ted at or	293 308 ND	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	
14 15 16 17 18 19	6030-9 6030-15 6032-5 1. If the parameter was quantitation limit, BQL (parenthesis; ND denote 2. "-" denotes that the	4/14/2011 4/18/2011 4/21/2000 detected above th) denotes that the s that the parameter information is not	6/27/2011 6/28/2011 6/27/2011 ne quantitation limi parameter was de er was not detecte available or the ar	Trip Blank Blank Field Blank it (QL), the numeric result is retected above the method dead at all. All the results are co	1.510 1.535 1.507 reported; BC tection limit orrected with	2.22 2.26 2.22 QL denote (MDL) but	15.10 15.35 15.07 s that th t below	196 207 ND e parameter was r QL and the estimat DF), if applicable.	4.00 4.07 3.99	15.1 15.3 15.1 ted at or	293 308 ND	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	
14 15 16 17 18 19 20	6030-9 6030-15 6032-5 1. If the parameter was quantitation limit, BQL (parenthesis; ND denote 2. "-" denotes that the	4/14/2011 4/18/2011 4/21/2000 detected above th) denotes that the s that the parameter information is not	6/27/2011 6/28/2011 6/27/2011 ne quantitation limi parameter was de er was not detecte available or the ar	Trip Blank Blank Field Blank it (QL), the numeric result is retected above the method dead at all. All the results are consistent is not analyzed.	1.510 1.535 1.507 reported; BC tection limit orrected with	2.22 2.26 2.22 QL denote (MDL) but	15.10 15.35 15.07 s that th t below	196 207 ND e parameter was r QL and the estimat DF), if applicable.	4.00 4.07 3.99	15.1 15.3 15.1 ted at or	293 308 ND	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	
14 15 16 17 18 19 20 21	6030-9 6030-15 6032-5 1. If the parameter was quantitation limit, BQL (parenthesis; ND denote 2. "-" denotes that the	4/14/2011 4/18/2011 4/21/2000 detected above th) denotes that the s that the parameter information is not	6/27/2011 6/28/2011 6/27/2011 ne quantitation limi parameter was de er was not detecte available or the ar	Trip Blank Blank Field Blank it (QL), the numeric result is retected above the method dead at all. All the results are consistent is not analyzed.	1.510 1.535 1.507 reported; BC tection limit orrected with	2.22 2.26 2.22 QL denote (MDL) but	15.10 15.35 15.07 s that th t below	196 207 ND e parameter was r QL and the estimat DF), if applicable.	4.00 4.07 3.99	15.1 15.3 15.1 ted at or	293 308 ND	3.096 3.146	15.1 15.3	ND ND	3.01 3.05	15.1 15.3	ND ND	

	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM
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10	Analyst:	Lisa Hudson		Analytes	1				Methane			Ethane			Propane			n-Butane
11				CAS#					74-82-8			74-84-0			74-98-6			106-97-8
12	Method:	RSKSOP-175, RS	KSOP-194	Unit					μg/L, in water			μg/L, in water			μg/L, in water			μg/L, in water
13	Lab Sample ID	Date Collected	Date Analyzed	Field Sample ID	SyrDilCorr	p _{hs} (atm)	MDL *	QL *	Data	MDL *	QL *	Data	MDL *	QL *	Data	MDL *	QL *	Data
13	Lab Sample ID 6030-9	Date Collected 4/14/11	Date Analyzed 6/27/11	Field Sample ID Trip Blank	SyrDilCorr 1.510	p _{hs} (atm) 0.980	MDL * 0.317	Q L * 2.16	Data 18.5	MDL * 1.16	Q L * 4.38	Data 56.4	MDL * 1.245	Q L * 6.07	Data ND	MDL * 1.53	Q L * 7.63	Data ND
13 14 15	•			•	·				<u> </u>									
13 14 15 16	6030-9	4/14/11	6/27/11	Trip Blank	1.510	0.980	0.317	2.16	18.5	1.16	4.38	56.4	1.245	6.07	ND	1.53	7.63	ND
13 14 15 16	6030-9 6030-15	4/14/11 4/18/11	6/27/11 6/28/11	Trip Blank Blank	1.510 1.535	0.980 1.12	0.317 0.456	2.16 3.10	18.5 27.2	1.16 1.64	4.38 6.21	56.4 81.3	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND
13 14 15 16 17	6030-9 6030-15 6032-5	4/14/11 4/18/11 4/21/00	6/27/11 6/28/11 6/27/11	Trip Blank Blank	1.510 1.535 1.507	0.980 1.12 0.986	0.317 0.456 0.316	2.16 3.10 2.15	18.5 27.2 ND	1.16 1.64 1.16	4.38 6.21 4.40	56.4 81.3 ND	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND
13 14 15 16 17 18	6030-9 6030-15 6032-5 1. If the parameter was denotes that the parame	4/14/11 4/18/11 4/21/00 detected above theter was detected al	6/27/11 6/28/11 6/27/11 e quantitation limit (bove the method d	Trip Blank Blank Field Blank QL), the numeric result is repetection limit (MDL) but below	1.510 1.535 1.507 orted; BQL der	0.980 1.12 0.986	0.317 0.456 0.316	2.16 3.10 2.15 ot detected	18.5 27.2 ND at or above the	1.16 1.64 1.16 quantitat	4.38 6.21 4.40 ion limit;	56.4 81.3 ND BQL ()	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND
13 14 15 16 17 18	6030-9 6030-15 6032-5	4/14/11 4/18/11 4/21/00 detected above theter was detected al	6/27/11 6/28/11 6/27/11 e quantitation limit (bove the method d	Trip Blank Blank Field Blank QL), the numeric result is repetection limit (MDL) but below	1.510 1.535 1.507 orted; BQL der	0.980 1.12 0.986	0.317 0.456 0.316	2.16 3.10 2.15 ot detected	18.5 27.2 ND at or above the	1.16 1.64 1.16 quantitat	4.38 6.21 4.40 ion limit;	56.4 81.3 ND BQL ()	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND
13 14 15 16 17 18	6030-9 6030-15 6032-5 1. If the parameter was denotes that the parame	4/14/11 4/18/11 4/21/00 detected above the ter was detected all esults are corrected	6/27/11 6/28/11 6/27/11 e quantitation limit (bove the method d with dilution factor	Trip Blank Blank Field Blank QL), the numeric result is repetection limit (MDL) but below s (DF), if applicable	1.510 1.535 1.507 orted; BQL der	0.980 1.12 0.986	0.317 0.456 0.316	2.16 3.10 2.15 ot detected	18.5 27.2 ND at or above the	1.16 1.64 1.16 quantitat	4.38 6.21 4.40 ion limit;	56.4 81.3 ND BQL ()	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND
13 14 15 16 17 18	6030-9 6030-15 6032-5 1. If the parameter was denotes that the parame detected at all. All the re 2. "" denotes that the	4/14/11 4/18/11 4/21/00 detected above the ter was detected al sults are corrected information is not a	6/27/11 6/28/11 6/27/11 e quantitation limit (bove the method d with dilution factor vailable or the ana	Trip Blank Blank Field Blank QL), the numeric result is repetection limit (MDL) but below s (DF), if applicable	1.510 1.535 1.507 1.507 orted; BQL der QL and the es	0.980 1.12 0.986 notes that the p	0.317 0.456 0.316 arameter was no	2.16 3.10 2.15 ot detected ed in pare	18.5 27.2 ND at or above the nthesis; ND deno	1.16 1.64 1.16 quantitat	4.38 6.21 4.40 ion limit;	56.4 81.3 ND BQL ()	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND
13 14 15 16 17 18 19 20 21	6030-9 6030-15 6032-5 1. If the parameter was denotes that the parame detected at all. All the reconstruction at the same denotes that the same denotes	4/14/11 4/18/11 4/21/00 detected above the ter was detected ale sults are corrected information is not a MDL and QL values re in the sample ar	6/27/11 6/28/11 6/27/11 e quantitation limit (bove the method d with dilution factor vailable or the ana s presented here a and when the sample	Trip Blank Blank Field Blank QL), the numeric result is representection limit (MDL) but below to (MDF), if applicable lyte is not analyzed. The for the cases where no present is diluted, the values of the Common state.	1.510 1.535 1.507 orted, BQL der QL and the es	0.980 1.12 0.986 notes that the ptimated numerical in the sample a	0.317 0.456 0.316 arameter was not result is report	2.16 3.10 2.15 ot detected in pare	18.5 27.2 ND at or above the nthesis; ND denotes a sample is made	1.16 1.64 1.16 quantitatotes that	4.38 6.21 4.40 ion limit; the parar	56.4 81.3 ND BQL () meter was not	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND
13 14 15 16 17 18 19 20 21 22 23 24	6030-9 6030-15 6032-5 1. If the parameter was denotes that the parame detected at all. All the re 2. "-" denotes that the 3. "*" denotes that the 4. When there is pressu (ppm), dilution of the sar	4/14/11 4/18/11 4/21/00 detected above the ter was detected al sesults are corrected information is not a MDL and QL values re in the sample arnple but not sample	6/27/11 6/28/11 6/27/11 e quantitation limit (bove the method d with dilution factor vailable or the ana s presented here a and when the sample e pressure changes	Trip Blank Blank Field Blank QL), the numeric result is representection limit (MDL) but below to (MDF), if applicable lyte is not analyzed. The for the cases where no present is diluted, the values of the Common state.	1.510 1.535 1.507 orted; BQL der QL and the essure is found QL and MDL for	0.980 1.12 0.986 notes that the ptitimated numerical in the sample are the dissolved	0.317 0.456 0.316 arameter was not cresult is reported in the control of the con	2.16 3.10 2.15 of detected in pare	18.5 27.2 ND lat or above the othersis; ND denotes the sample is made change. When e	1.16 1.64 1.16 quantitatotes that	4.38 6.21 4.40 ion limit; the parar	56.4 81.3 ND BQL () meter was not	1.245 1.780	6.07 8.70	ND ND	1.53 2.19	7.63 11.0	ND ND

	Α	В	С	D	E	F	G	Н	
1	Shaw Environmenta	al and Infrast	ructure, Inc.						
2	Analytical Service Res	ults Report							
3									
4	Laboratory:	GC	Report Date:	6/28/11					
5									
6	Technical Directive:	70A767SF							
7									
8	Analyst:	Lisa Hudson		L	ab Sample II	D	6030-9	6030-15	6032-5
9				Ε	Date Collected	d	4/14/2011	4/18/2011	4/21/2011
10				Т	emperature ⁰	c	23.0	23.0	23.0
11					Pressure, ps	i	-0.3	1.8	-0.2
12				Ι	Date Analyze	d	6/27/2011	6/28/2011	6/27/2011
13					Sample Nam	e	Trip Blank	Blank	Field Blank
14	Analytes	3	CAS#	Unit	MDL	QL	Data		Data
	Methane		74-82-8	ppm	1.47	10.0	130	135	ND
16									
_,,	Ethane		74-84-0	ppm	2.65	10.0	194	201	ND
17	Propane		74-84-0 74-98-6	ppm ppm	2.65 2.05	10.0 10.0	194 ND	201 ND	ND ND
17 18	Propane i-Butane								
17 18	Propane		74-98-6	ppm	2.05	10.0	ND	ND	ND
17 18	Propane i-Butane		74-98-6 7553-56-2	ppm ppm	2.05 10.0*	10.0 10.0*	ND ND	ND ND	ND ND
17 18 19	Propane i-Butane n-Butane		74-98-6 7553-56-2	ppm ppm ppm	2.05 10.0* 1.99	10.0 10.0* 10.0	ND ND ND	ND ND ND	ND ND ND
17 18 19 20 21 22	Propane i-Butane n-Butane dilution factor Comments:		74-98-6 7553-56-2 106-97-8	ppm ppm ppm	2.05 10.0* 1.99	10.0 10.0* 10.0 -	ND ND ND	ND ND ND	ND ND ND
17 18 19 20 21 22	Propane i-Butane n-Butane dilution factor Comments: The data quality objectives (DQ)		74-98-6 7553-56-2 106-97-8	ppm ppm ppm	2.05 10.0* 1.99	10.0 10.0* 10.0 -	ND ND ND	ND ND ND	ND ND ND
17 18 19 20 21 22 23	Propane i-Butane n-Butane dilution factor Comments: The data quality objectives (DQ on January 13, 2011. *Estimated 1. If the parameter was detect	d value. ted above the quant	74-98-6 7553-56-2 106-97-8 - - nave been met. The M	ppm ppm ppm DL's and QL's renumeric result i	2.05 10.0* 1.99 - eported represent	10.0 10.0* 10.0 - those completed denotes that the	ND ND ND	ND ND ND	ND ND ND
17 18 19 20 21 22 23 24	Propane i-Butane n-Butane dilution factor Comments: The data quality objectives (DQ: 0n January 13, 2011. *Estimated 1. If the parameter was detect parameter was not detected at	d value. ted above the quant or above the quantit	74-98-6 7553-56-2 106-97-8 - nave been met. The Matation limit (QL), the ation limit; BQL () de	ppm ppm ppm DL's and QL's renumeric result is enotes that the p	2.05 10.0* 1.99 - eported represent as reported; BQL parameter was de	10.0 10.0* 10.0 those completed denotes that the tected above the	ND ND ND	ND ND ND	ND ND ND
17 18 19 20 21 22 23 24	Propane i-Butane n-Butane dilution factor Comments: The data quality objectives (DQ on January 13, 2011. *Estimated 1. If the parameter was detect	d value. ted above the quant or above the quantit ut below QL and the	74-98-6 7553-56-2 106-97-8 - nave been met. The Matation limit (QL), the ation limit; BQL () deestimated numeric res	ppm ppm ppm DL's and QL's renumeric result is enotes that the put is reported in	2.05 10.0* 1.99 - eported represent is reported; BQL parameter was detailed a parenthesis; ND	10.0 10.0* 10.0 those completed denotes that the tected above the	ND ND ND	ND ND ND	ND ND ND

	A	В	С	D	E	F	G	Н	1	J	K	L	М	N
1	Shaw Environmental a	nd Infrastructur	e. Inc.											
2	Analytical Service Resi	ults Report	<u> </u>											
3	1	·												
4	Laboratory:	GC		Report Date:	6/28/11									
5														
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID		Argon Blanl	k		Argon Blanl	Κ.		Argon Blani	(
9				Additio	onal ID		GB			GB			GB	
10				Date Pr	epared		6/27/11			6/27/11			6/27/11	
11				Date Ar	nalyzed		6/27/11			6/27/11			6/27/11	
12	Analytes	3	I I m i A	MDL	O!	D-4-	True	% Rec.	D-4-	True	% Rec.	D-4-	True	% Rec.
13	Names	CAS#	Unit	MDL	QL	Data	Values	% Rec.	Data	Values	% Rec.	Data	Values	% Rec.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	ND	-	-
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	ND	-	-	ND	-	-
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	ND	-	-
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	ND	-	-	ND	-	-
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	ND	-	-	ND	-	-
19	dilution factor	-	-	=	=	ı	1	-	•	1	-	-	1	-
20														
21	Comments:													
22 23	The data quality objectives represent those completed or	(DQO) of RSKSOF January 13, 2011.	P-194 have be *Estimated val	een met. The MDL's ues.	and QL's reported									
24	Notes:													
	MB - Method Blank, GB - analyzed within the batch of analytes at known concentrat analytes. The field sample is ample duplicate analysis. A in the sample result section.	samples. LCS - La ions. MS - Matrix S _I d is identified. SS - a sample selected b	aboratory Contr pike. A field sa Samples obta y the lab analy	ol Spike. A laborato mple spiked with kno ined from a second st to analyze as a du	ory blank spiked with own concentrations of source. DUP - Field aplicate. It is reported									
29 30	2. "-" denotes that the info	/ for CCC		•	age of the results to									

	A	В	С	D	E	0	Р	Q	R	S	T	U	V	W
1	Shaw Environmental a	nd Infrastructur	e. Inc.											
2	Analytical Service Resu	ults Report												
3	-													
4	Laboratory:	GC		Report Date:	6/28/11									
5														
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID		Water Blanl	k	Re	finery Gas	#2	Re	finery Gas	#2
9			Additio	onal ID		MB			CCC			SS		
10			Date Pr	epared		6/27/11			7/8/10			5/13/10		
11				Date Ar	nalyzed		6/27/11			6/27/11			6/27/11	
12	Analytes	3	Unit	MDL	QL	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.
13	Names	CAS#	Unit	MDL	QL	Data	Values	% Rec.	Data	Values	% Rec.	Data	Values	% Rec.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	48400	50080	96.6	50500	50080	101
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	42200	40120	105	42700	40120	106
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	55300	60150	91.9	55500	60150	92.3
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	46900	50180	93.5	47100	50180	93.9
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	38700	40220	96.2	38800	40220	96.5
19	dilution factor	-	•	=	=	ı	1	-	-	1	-	-	1	-
20														
21	Comments:													
22 23	The data quality objectives represent those completed or	(DQO) of RSKSOF January 13, 2011.	P-194 have be *Estimated vali	een met. The MDL's ues.	and QL's reported									
24	Notes:													
25 26 27	MB - Method Blank, GB - analyzed within the batch of analytes at known concentrat analytes. The field sample ic sample duplicate analysis. A in the sample result section.	samples. LCS - La ions. MS - Matrix Sp d is identified. SS - a sample selected b	boratory Controller Affeld sa Samples obtails the lab analysis	ol Spike. A laborato mple spiked with kno ined from a second st to analyze as a du	ry blank spiked with wn concentrations of source. DUP - Field plicate. It is reported									
30	2. "-" denotes that the infor	rmation is not availa	ble or the analy	te is not analyzed.										

	Α	В	С	D	E	X	Υ	Z	AA	AB	AC	AD	AE	AF
1	Shaw Environmental a	nd Infrastructure	e, Inc.											
2	Analytical Service Resu	ults Report												
3														
4	Laboratory:	GC		Report Date:	6/28/11									
5														
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID		Argon Blanl	K	,	Argon Blanl	<		Argon Blank	<
9				Additio	onal ID		GB			GB			GB	
10				Date Pr	epared		6/27/11			6/27/11			6/27/11	
11				Date Ar	nalyzed		6/27/11			6/27/11			6/27/11	
12	Analytes	3	Unit	MDL	QL	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.
13	Names	CAS#	Onic	MDE	QL.	Data	Values	70 1100.	Data	Values	70 IXCC.	Data	Values	70 Nec.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	ND	-	-
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	ND	-	-	ND	-	-
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	ND	-	-
_	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	ND	-	-	ND	-	-
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	ND	-	-	ND	-	-
19	dilution factor	-	-	-	-	-	1	-	-	1	-	-	1	-
20														
	Comments:													
	The data quality objectives represent those completed or				and QL's reported									
24	Notes:													
25	1. MB - Method Blank. GB - analyzed within the batch of													
26	analyzed within the batch of analytes at known concentrat													
	analytes. The field sample id	d is identified. SS -	Samples obta	ined from a second	source. DUP - Field									
28	sample duplicate analysis. A													
29	in the sample result section.	/ for OCC			age of the results to									
30	2. "-" denotes that the infor	rmation is not availal	ble or the analy	te is not analyzed.										

	Α	В	С	D	E	AG	AH	Al	AJ	AK	AL	AM	AN	AO
1	Shaw Environmental a	nd Infrastructure	e, Inc.											
2	Analytical Service Resu	ults Report												
3														
4	Laboratory:	GC		Report Date:	6/28/11									
5				·										
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID		Argon Blanl	k		Argon Blanl	<		Argon Blank	₹
9				Additio	onal ID		GB			GB			GB	
10				Date Pr	epared		6/27/11			6/27/11			6/27/11	
11				Date Ar	nalyzed		6/27/11			6/27/11			6/27/11	
12	Analytes	3	Unit	MDL	QL	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.
13	Names	CAS#	Onic	WIDE	QL	ממ	Values	70 NEC.	Data	Values	/0 INCC.	Data	Values	70 Nec.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	ND	-	-
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	ND	-	-	ND	-	-
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	ND	-	-
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	ND	-	-	ND	-	-
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	ND	-	-	ND	-	-
19	dilution factor	-	-	-	-	-	1	-	-	1	-	-	1	-
20														
21	Comments:													
22 23	The data quality objectives represent those completed or				and QL's reported									
24	Notes:													
	 MB - Method Blank, GB - analyzed within the batch of analytes at known concentrat analytes. The field sample ic 	samples. L CS - La ions. MS - Matrix Sp d is identified. SS -	boratory Contr pike. A field sa Samples obta	ol Spike. A laborato mple spiked with kno ined from a second	ry blank spiked with wn concentrations of source. DUP - Field									
28 29	sample duplicate analysis. A in the sample result section.	% REC - Percent F	Recovery. Calcu	ulated as the percent										
30	2. "-" denotes that the infor	rmation is not availal	ble or the analy	rte is not analyzed.										

	A	В	С	D	E	AP	AQ	AR	AS	AT	AU	AV	AW	AX
1	Shaw Environmental a	nd Infrastructur	e. Inc.											
2	Analytical Service Resu	ılts Report												
3		· ·												
4	Laboratory:	GC		Report Date:	6/28/11									
5														
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID		Argon Blanl	k		Argon Blanl	Κ.	Re	finery Gas	#2
9			Additio	onal ID		GB			GB			CCC		
10				Date Pr	epared		6/27/11			6/27/11			7/8/10	
11				Date Ar	nalyzed		6/27/11			6/27/11			6/27/11	
12	Analytes	;	11	MDL	O!	D-4-	True	% Rec.	D-4-	True	% Rec.	D-4-	True	% Rec.
13	Names	CAS#	Unit	MDL	QL	Data	Values	% Rec.	Data	Values	% Rec.	Data	Values	% Rec.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	49600	50080	99.0
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	ND	-	-	42200	40120	105
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	62900	60150	105
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	ND	-	-	51800	50180	103
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	ND	-	-	41200	40220	102
19	dilution factor	-	•	=	=	ı	1	-	•	1	-	-	1	-
20														
21	Comments:													
22 23	The data quality objectives represent those completed or	(DQO) of RSKSOF January 13, 2011.	P-194 have be *Estimated vali	een met. The MDL's ues.	and QL's reported									
24	Notes:													
25	1. MB - Method Blank. GB -													
26	analyzed within the batch of analytes at known concentrat													
27	analytes. The field sample in													
	sample duplicate analysis. A	sample selected b	y the lab analy	st to analyze as a du	plicate. It is reported									
29	in the sample result section.	% REC - Percent F	Recovery. Calci	ulated as the percent	age of the results to									
30	2. "-" denotes that the infor	mation is not availa	ble or the analy	te is not analyzed.										

	A	В	С	D	E	AY	AZ	BA	BB	BC	BD	BE	BF	BG
1	Shaw Environmental a	nd Infrastructure	e. Inc.											
2	Analytical Service Resi	ults Report												
3	1	·												
4	Laboratory:	GC		Report Date:	6/28/11									
5														
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID		Argon Blanl	k		Argon Blanl	<		Argon Blanl	K
9				Additio	onal ID		GB			GB			GB	
10				Date Pr	epared		6/27/11			6/27/11			6/27/11	
11				Date Ar	nalyzed		6/27/11			6/27/11			6/27/11	
12	Analytes	3	11	MDL	O!	D-4-	True	% Rec.	D-4-	True	% Rec.	D-t-	True	% Rec.
13	Names	CAS#	Unit	MDL	QL	Data	Values	% Rec.	Data	Values	% Rec.	Data	Values	% Rec.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	ND	-	-
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	ND	-	-	ND	-	-
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	ND	-	-
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	ND	-	-	ND	-	-
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	ND	-	-	ND	-	-
19	dilution factor	-	•	=	=	ı	1	-	•	1	-	•	1	-
20														
21	Comments:													
22 23	The data quality objectives represent those completed or	(DQO) of RSKSOF January 13, 2011.	P-194 have be *Estimated vali	een met. The MDL's ues.	and QL's reported									
24	Notes:													
25 26 27 28	MB - Method Blank, GB - analyzed within the batch of analytes at known concentrat analytes. The field sample ic sample duplicate analysis. A	samples. LCS - La ions. MS - Matrix Sp d is identified. SS - a sample selected by	boratory Controller Affeld sa Samples obtains the laborates of the lab analysis of th	ol Spike. A laborato mple spiked with kno ined from a second st to analyze as a du	ry blank spiked with wn concentrations of source. DUP - Field plicate. It is reported									
29	in the sample result section. 2. "-" denotes that the information of the control	/		•	age or the results to									

	Α	В	С	D	E	ВН	Bl	BJ	BK	BL	BM	BN	ВО	BP
1	Shaw Environmental ar	nd Infrastructure	e, Inc.											
2	Analytical Service Resu	ılts Report												
3														
4	Laboratory:	GC		Report Date:	6/28/11									
5				·										
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID	Α	rgon Blank		Д	rgon Blar	nk	A	rgon Blan	k
9			nal ID		GB			GB			GB			
10			epared		6/28/11			6/28/11			6/28/11			
11				Date Ar	nalyzed		6/28/11			6/28/11			6/28/11	
12	Analytes		Unit	MDL	QL	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.
13	Names	CAS#	Onit	MDL	QL	Data	Values	% Rec.	Data	Values	% Rec.	Data	Values	% Rec.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	ND	-	-
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	ND	-	-	ND	-	-
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	20	ı	-
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	ND	-	-	ND	-	-
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	ND	-	-	D	1	-
19	dilution factor	-	-	-	-	-	1	-	-	1	-	1	1	-
20														
	Comments:													
22 23	The data quality objectives represent those completed on	(DQO) of RSKSOF January 13, 2011.	P-194 have b *Estimated val	een met. The MDL's ues.	and QL's reported									
24	Notes:													
25	1. MB - Method Blank. GB -													
26	analyzed within the batch of analytes at known concentrati													
27	analytes at known concentration													
28	sample duplicate analysis. A	sample selected by	y the lab analy	st to analyze as a du	plicate. It is reported									
29	in the sample result section.	/ f 000			age of the results to									
30	2. "-" denotes that the infor	mation is not availal	ble or the anal	yte is not analyzed.										

	Α	В	С	D	F	BQ	BR	BS	BT	BU	BV	BW	ВХ	BY
1	Shaw Environmental ar	nd Infrastructur		5	_		5					5.,	57.	
-	Analytical Service Resu		,											
3	,													
4	Laboratory:	GC		Report Date:	6/28/11									
5	·			,										
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	rple ID	V	Vater Blar	nk	Ref	Refinery Gas #2			inery Gas	#2
9				Additio	nal ID		MB			CCC			SS	
10				Date Prepared			6/28/11			7/8/10	5/13/10			
11			Date Analyzed				6/28/11		6/28/11			6/28/11		
12	Analytes		Unit MDL		QL	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.
13	Names	CAS#	Onic	WIDE	QL	Data	Values	/0 INEC.	Data	Values	70 NCC.	Data	Values	/0 INEC.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	46100	50080	92.1	48300	50080	96.4
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	-	39900	40120	99.5	40500	40120	101
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	61000	60150	101	56700	60150	94.3
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	51000	50180	102	48800	50180	97.2
18	n-Butane	106-97-8	ppm	1.99	10.0	ND		-	41400	40220	103	39600	40220	98.5
19	dilution factor	-	-	-	-	-	1	-	-	1	-	-	1	-
20														
	Comments:													
	The data quality objectives represent those completed on				and QL's reported									
24	Notes:													
25	1. MB - Method Blank, GB -													
26	analyzed within the batch of analytes at known concentrati													
	analytes. The field sample id	l is identified. SS -	Samples obta	ained from a second	source. DUP - Field									
28	sample duplicate analysis. A													
29	in the sample result section.	(6 CCC	•		age of the results to									
30	2. "-" denotes that the infor	denotes that the information is not available or the analyte is not analyzed.												

	Α	В	С	D	F	BZ	CA	CB	CC	CD	CF	CF	CG	CH
1	Shaw Environmental ar	nd Infrastructur		5	_		G/ 1	- 55			O.		- 55	0
-	Analytical Service Resu		-,											
3	,	i i											1	
\rightarrow	Laboratory:	GC		Report Date:	6/28/11									
5	•			,										
6	Technical Directive:	70A767SF												
7														
8	Analyst:	Lisa Hudson		QC San	nple ID	P	rgon Blar	nk	P	rgon Blar	ık	A	ık	
9	·			Additio	nal ID		GB			GB			GB	
10				Date Pr	epared		6/28/11		6/28/11			6/28/11		
11				Date Analyzed			6/28/11			6/28/11		6/28/11		
12	Analytes	•	Unit	t MDL QL Data True		True	% Rec.	Data	Data True		Data	True	% Rec.	
13	Names	CAS#	Onit	WDL	QL	Data	Values	% Rec.	Data	Values	% Rec.	Data	Values	70 NEC.
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	ND	-	-
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-		ND	-	-	ND	-	-
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	ND	-	-
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	-	ND	-	-	ND	-	-
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	-	ND	-	-	ND	-	-
19	dilution factor	-	-	-	-	-	1	-	-	1	-	-	1	-
20														
	Comments:													
	The data quality objectives represent those completed on				and QL's reported									
24	Notes:													
	1. MB - Method Blank, GB -													
26	analyzed within the batch of analytes at known concentrati													
	analytes. The field sample id	d is identified. SS -	Samples obta	ained from a second	source. DUP - Field									
	sample duplicate analysis. A													
29	in the sample result section.	/ for OCC	•		age of the results to									
30	"-" denotes that the infor	mation is not availa	ble or the anal	yte is not analyzed.										

Г	Α	В	С	D	E	Cl	CJ	СК	CL	СМ	CN	CO	CP	CQ	
1	Shaw Environmental a	nd Infrastructure	e, Inc.												
2	Analytical Service Resi	ults Report													
3															
4	Laboratory:	GC		Report Date:	6/28/11										
5				·											
6	Technical Directive:	70A767SF													
7															
8	Analyst:	Lisa Hudson		QC San	ple ID	P	rgon Blan	k	P	Argon Blar	nk	A	ık		
9				Additio	nal ID		GB			GB		GB			
10				Date Pr	epared		6/28/11			6/28/11					
11				Date Analyzed			6/28/11			6/28/11		6/28/11			
12	Analytes	3	I I mid	Unit	MDL	QL	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.
13	Names	CAS#	Onit	WDL	QL	Data	Values	% Nec.	Data	Values	70 Nec.	Data	Values	% Rec.	
14	Methane	74-82-8	ppm	1.47	10.0	ND	-	-	ND	-	-	ND	-	-	
15	Ethane	74-84-0	ppm	2.65	10.0	ND	-	1	ND	-	-	ND	-	-	
16	Propane	74-98-6	ppm	2.05	10.0	ND	-	-	ND	-	-	ND	-	-	
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	ND	-	1	ND	-	-	ND	-	-	
18	n-Butane	106-97-8	ppm	1.99	10.0	ND	-	1	ND	-	-	D	-	-	
19	dilution factor	-	-	-	-	-	1	1	-	1	-		1	-	
20															
21	Comments:														
22 23	The data quality objectives represent those completed or				and QL's reported										
24	Notes:														
25	1. MB - Method Blank, GB -														
26	analyzed within the batch of analytes at known concentrat														
27	analytes. The field sample in														
	sample duplicate analysis. A	sample selected by	the lab analy	st to analyze as a du	olicate. It is reported										
29	in the sample result section.	% REC - Percent F	tecovery. Calo	ulated as the percent	age of the results to										
30	2. "-" denotes that the infor	rmation is not availal	ole or the anal	yte is not analyzed.											

	A	В	С	D	E	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC
1	Shaw Environmental a	nd Infrastructur	e. Inc.														
2	Analytical Service Resi	ults Report	<i>'</i>														
3	•																
\vdash	Laboratory:	GC		Report Date:	6/28/11												
5	•			·													
6	Technical Directive:	70A767SF															
7																	
8	Analyst:	Lisa Hudson		QC San	nple ID	Ref	inery Gas	#2	A	rgon Blar	nk	A	Argon Blar	nk	Д	rgon Blar	ık
9				Additio	onal ID		CCC			GB		GB					
10				Date Pr	epared		7/8/10			6/28/11			6/28/11		6/28/11		
11				Date Ar	Date Analyzed					6/28/11			6/28/11		6/28/11		
12	Analytes	3	Unit	MDL	QL	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.	Data	True	% Rec.
13	Names	CAS#	Oille	WIDE	QL	Data	Values	/0 INCC.	Data	Values	/6 Kec.	Data	Values	/6 INEC.	Data	Values	/0 NCC.
14	Methane	74-82-8	ppm	1.47	10.0	47900	50080	95.6	ND	-	-	ND	-	-	ND	-	-
15	Ethane	74-84-0	ppm	2.65	10.0	40800	40120	102	ND	-	-	ND	-	-	ND	-	-
16	Propane	74-98-6	ppm	2.05	10.0	57600	60150	95.8	ND	-	-	ND	-	-	ND	-	-
17	i-Butane	7553-56-2	ppm	10.0*	10.0*	49300	50180	98.2	ND	-	-	ZD	-	-	ND	-	-
18	n-Butane	106-97-8	ppm	1.99	10.0	40000	40220	99.5	ND	-	-	ND	-	-	ND	-	-
19	dilution factor	-	1	-	1	-	1	-	-	1	-	-	1	-	-	1	-
20																	
21	Comments:																
22 23	The data quality objectives represent those completed or	(DQO) of RSKSOF January 13, 2011.	P-194 have b *Estimated va	een met. The MDL's lues.	and QL's reported												
24	Notes:																
25	1. MB - Method Blank. GB -																
26	analyzed within the batch of analytes at known concentrat																
27	analytes at known concentrat analytes. The field sample id																
	sample duplicate analysis. A	sample selected b	y the lab analy	st to analyze as a du	plicate. It is reported												
29	in the sample result section.	% REC - Percent F	Recovery. Calo	ulated as the percent	age of the results to												
30	2. "-" denotes that the infor	rmation is not availa	ble or the anal	yte is not analyzed.													

Henrys Law Constants Use	ed for	the Calculations((atm/mol fractio	n)	
				•	
Sample	T °C	Methane	Ethane	Propane	n-Butane
Trip Blank	23	38,276	28,182	34,579	42,130
Blank	23	38,276	28,182	34,579	42,130
Field Blank	23	38,276	28,182	34,579	42,130

6/27/2011	6/28/2011
Analytical Queue	Analytical Queue
Argon Blank	Argon Blank
Argon Blank	Argon Blank
Argon Blank	Argon Blank
H2O Blank	H2O Blank
Refinery Gas	Refinery Gas
Refinery Gas QC	Refinery Gas QC
Argon Blank	Argon Blank
Argon Blank	Argon Blank
Argon Blank	Argon Blank
Trip Blank 6030-9	Trip Blank 6030-15
Argon Blank	Argon Blank
Argon Blank	Argon Blank
Argon Blank	Argon Blank
Field Blank 6032-5	Refinery Gas
Argon Blank	Argon Blank
Argon Blank	Argon Blank
Argon Blank	Argon Blank
Refinery Gas	
Argon Blank	
Argon Blank	
Argon Blank	